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ABSTRACT

This paper presents a study regarding the correlation of the Stanford-Binet: 4th Edition Intelligence Quotient (IQ) scores with the Wechsler Adult Intelligence Scale-Revised (WAIS-R) IQ scores for the purpose of improving the identification process for educable mentally handicapped (EMH) school age adolescents and young adults. The sample included 35 subjects, age 17-21, who attend public school in three school districts in northwestern South Carolina. The low correlations between the factors of the WAIS-R and the four area scores of the Stanford (Verbal Reasoning, Quantitative Reasoning, Abstract/Visual Reasoning, and Short Term Memory) indicate that the two instruments will not yield equal estimates of intellectual abililty of adolescent EMH students. Correlations with the highest values indicate that Verbal and Full Scale/Composite scores will range about 10 to 12 points higher on the WAIS-R. The lowered Stanford IQ's suggest that this test may be more appropriate and yield more consistent IQ scores in the EMH range of previously identified EMH adolescents than the WAIS-R. A cursory review of the raw data indicates only slight improvement in retention rate if placement decisions are made based on consistent subnormal measures on all factors. (PN)

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COEFFICIENTS OF CORRELATION OF IQ's ON THE WAIS-R WITH STANDARD AGE SCORES ON THE STANFORD-BINET, 4th EDITION FOR PREVIOUSLY IDENTIFIED MENTALLY HANDICAPPED ADOLESCENTS

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COEFFICIENTS OF CORRELATION OF IQ's ON THE WAIS-R WITH STANDARD AGE SCORES ON THE STANFORD-BINET, 4th EDITION FOR PREVIOUSLY IDENTIFIED MENTALLY HANDICAPPED ADOLESCENTS

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Measuring the intelligence of adolescent and young adult educable mentally handicapped (EMH) school age subjects is a growing concern of practicing school psychologists due to, (1) the increased numbers of students who fall into this category as a result of P.L. 94-142, and (2) the reported elevated scores on Wechsler Adult Intelligence Scale-Revised (WAIS-R) measures as school age students move into the age range of the adult scale (Hannon and Kicklighter, 1970; Simpson, 1970; Richardson, 1983; Richardson, 1984).

Reports of IQ score increases ranging from 10 to 18 points and the possibility of negating special education services for 60% to 80% of the previously identified/served EMH adolescents presents a problem for schools, parents, and the youth. The credibility of earlier identification, the need for special services, and the disruption of programming to youth due to a statistical change in the IQ with no concomitant change in learning rate are questioned.

IQ scores which were obtained from tables of the WAIS-R which were generated for the population 16 through 74, but based on a "reference group" of 500 persons between 20 and 34 years of age (Wechsler, 1981, p.9) doesn't seem to be appropriate. The relatively small numbers in the sample population and the

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"reference group" would yield very small numbers of adolescent and young adult EMH subjects and therefore be suspect as an indication of EMH intellectual abilities.

The Stanford-Binet, 4th Edition (S-B,4th), a 1986 revision of the 1960 Stanford-Binet Scale;Form L-M, was developed as a change in order to produce a more effective instrument for appraising the cognitive skills of individuals from ages 2 to adult (Thorndike, Hagen, and Sattler, 1986, p. 1). The organization of the S-B,4th provides a g or general reasoning ability measure plus broader coverage of cognitive skills and information-processing capabilities. These additional measures (factors or levels) make the test more modern and relevant to todays assessment needs while maintaining the historical continuity of earlier S-B measures (Thorndike, et al 1986, p. 3). Figure 1 portrays the organization of the S-B, 4th.

Figure 1

Cognitive-Abilities Factors Appraised In the Stanford-Binet: 4th Edition

4 Area Scores:	Verbal Reasoning	Abstract/Visual Reasoning	Quantitative Comprehension	Short-Term Memory
15 Individual Tests:	Vocabulary	Pattern Analysis	Quantitative	Memory for Sentences
	Comprehension	Matrices	Number Series	Memory for Digits
	Verbal Relations	Paper Folding and Cutting	Equation Building	Memory for Objects
	Absurdities	Copying Copying		Bead Memory

Scores: Raw and scaled scores for each of fifteen subtests
Four content-area scores
A composite of the four area scores
A composite of any combination of the four area scores
Percentiles
Profile on all fifteen subtests (based on scaled scores)

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The present study was conducted in order to study the correlation of the Stanford-Binet: 4th Edition IQ scores with WAIS-R IQ scores for purposes of improving the identification process for mentally handicapped adolescents and young adults in schools.

METHOD

INSTRUMENTS

The WAIS-R (Wechsler, 1981) is the most frequently utilized individually administered measure of verbal and non-verbal abilities for use with adults. It is composed of 11 regularly administered subtests organized into Verbal and Performance Scales. The Verbal and Performance Scales combine to yield a Full Scale, all of which have a normed mean of 100 and SD of 15.

The S-B;4th is the newest of individually administered IQ tests and is divided into three hiearchies or levels which yield 4 area scores; Verbal Reasoning (VR), Quantitative Reasoning (QR), Abstract/Visual Reasoning (AVR), and Short Term Memory (STM). Each Area has four subtests except QR which has only three. Only six of the subtests cover the entire S-B:4th age range, 2 to adult. Each Area yields an Area Standard Age Score (SAS) with normative means of 100 and SD 16. Guide for Administering and Scoring The Fourth Edition are still being mailed to the purchasers of the S-B:4th and the Technical Manual is due for distribution in May, 1986.

SUBJECTS

The sample included 35 subjects who attend public schools in 3 school districts in northwestern South Carolina. All of the subjects had been identified as mentally handicapped earlier in

his/her school enrollemnt period. All are being served as mentally handicapped presently and some have been reevaluated one or more times for continuation in the special programs for EMH services. All subjects were between 17 and 21. All of the subjects were part of the special S-B; 4th normative studies for subjects 17 through 32-6.

PROCEDURE

Seven school districts and one Community Action Agency were solicited for and agreed to participate in a special population study for mentally handicapped subjects 17 to 32-6 in the S-B:4th standardization study. Four psychological examiners were trained to administer the S-B:4th. Permission forms were distributed and returned. Sixty-three previously identified mentally handicapped subjects were tested with the S-B:4th.

The S-B:4th were administered during October and November of 1985 to meet the time requirements of the publishers. Thirty-five were identified as school aged EMH students who would be available for WAIS-R testing during the Spring of 1986 because of reevaluation procedures in public schools.

Two specially trained and reviewed examiners were scheduled to administer the WAIS-R to the same subjects in March, 1986. Standard administration was emphasized, raw scores only were recorded, and any questionably scored items were to be scored in conference. Raw-scoring was felt to be one way of controlling examiner bias. There were no scoring problems reported. Raw Scores were converted to scale scores and IQ scores by this investigator.

RESULTS

Table 1 shows the means and standard deviations for the IQ factors of the WAIS-R; Verbal IQ (VIQ), Performance IQ (PIQ), and Full Scale IQ (FSIQ). Additionally, the means and standard deviations for the S-B:4th Areas: Verbal Reasoning (VRAS), Abstract/Visual Reasoning (A/VRAS), Quantitative Reasoning (QRAS), Short-Term Memory (STMAS), and Composite SAS (CSAS).

Table 1

Means and SD's for WAIS-R IQ's and S-B:4th Area Scores

IQ/Scores	Means	SD
VIQ	73.74	5.99
PIQ	77.23	8.50
FSIQ	74.09	5.16
VRAS	61.91	8.31
A/VRAS	77.37	9.77
QRAS	67.29	7.56
STMAS	64.26	11.17
CSAS	63.29	6.66

Table 2 shows the Pearson Correlation Coefficients for the WAIS-R IQ scores and the S-B:4th Area Scores. None of the correlation coefficients were sufficiently high to conclude that the WAIS-R IQ's and the S-B:4th Area Scores were comparable. As might be expected by some, the FSIQ and the CSAS (Composite) showed the highest correlation. The only other correlations with values higher than .50 seemed logical; VRAS and VIQ, VIQ and CSAS, VRAS and FSIQ, and PIQ and A/VRAS. STMAS had the lowest correlations with any of the WAIS-R IQ scores and suggests that this may be a new factor in individually administered tests.

Table 3 shows the mean differences between the WAIS-R IQ's and the S-B:4th Area Scores. Except for three occasions the

Table 2

Pearson Correlation Coefficients for
WAIS-R IQ's and S-B:4th Area Scores

	VIQ	PIQ	FSIQ
VRAS	0.63560 0.0001	0.24491 0.1562	0.55857 0.0005
A/VRAS	0.23025 0.1833	0.53736 0.0009	0.47842 0.0037
QRAS	0.46008 0.0054	0.04690 0.7890	0.33422 0.0497
STMAS	0.32179 0.0594	0.25029 0.1470	0.33648 0.0481
CSAS	0.61120 0.0001	0.44131 0.0080	0.65823 0.0001

S-B:4th Area Scores are lower than the WAIS-R IQ's. Differences range from being 6.8 to 15.32 points lower than the WAIS-R IQ's.

Table 3

Mean Differences Between
WAIS-R IQ's and S-B:4th Area Scores

Factors	Mean Differences
VIQ-VRAS	11.83
VIQ- A/VRAS	+ 3.63
VIQ-QRAS	6.45
VIQ- STMAS	9.49
VIQ- CSAS	10.45
PIQ-VRAS	15.32
PIQ-A/VRAS	+ 0.14
PIQ-QRAS	9.99
PIQ-STMAS	12.97
PIQ-CSAS	13.94
FSIQ-VRAS	12.18
FSIQ-A/VRAS	+ 4.28
FSIQ-QRAS	6.80
FSIQ-STMAS	9.83
FSIQ-CSAS	10.80

DISCUSSION

The low correlations between the factors of the WAIS-R and and the Areas of the S-B:4th indicate that the two instruments will not yield equal estimates of intellectual ability of adolescent EMH students. Correlations with the highest values indicate that Verbal and Full Scale/Composite scores will range about 10 to 12 points higher on the WAIS-R. The lowered S-B:4th IQ's suggest that this test may be more appropriate and yield more consistent IQ scores in the EMH range of previously identified EMH adolescents than the WAIS-R. A cursory review of the raw data indicates only slight improvement in retention rate if placement decisions are made based on "consistent subnormal measures on all factors".

Caution should be taken with these findings until other studies replicate findings and it is determined that the material in the Technical Manual support the position. Additionally, there is a need for studies with more longitudinal data than that the subjects "were previously identified EMH Adolescents.

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